UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,390	05/30/2006	Neil Russell Foster	MAP1130	4759

28213 7590 07/06/2011

DLA PIPER LLP (US)
4365 EXECUTIVE DRIVE
SUITE 1100
SAN DIEGO, CA 92121-2133

EXAMINER	
ZALASKY, KATHERINE M	

ART UNIT	PAPER NUMBER
1777	

MAIL DATE	DELIVERY MODE
07/06/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,390	FOSTER ET AL.	
	Examiner	Art Unit	
	KATHERINE ZALASKY	1777	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,10-12,26 and 29-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,10-12,26 and 29-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Status

1. **Claims 1-7, 10-12, 26, and 29-31**, as amended 15 June 2011, are currently pending. **Claims 8-9, 13-25, 27, and 28** are cancelled.

Claim Interpretation

2. It is noted that **claims 1-7, 10-12, and 29-31** are directed to an apparatus. Regarding limitations recited in these claims which are directed to a manner of operating disclosed apparatus, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

3. Moreover, statements in the preamble reciting the purpose or intended use of the claimed invention which do not result in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art do not limit the claim and do not distinguish over the prior art apparatus (or process). See, e.g., *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963); *In re Sinex*, 309 F.2d 488, 492, 135 USPQ 302, 305 (CCPA 1962).

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claims 1-7, 11, 29 and 30** are rejected under 35 U.S.C. 102(b) as being anticipated by Mertens (DE 19714790, citations from machine translation).

Regarding **claim 1**, Mertens discloses an apparatus comprising:

an outer chamber for containing a dense gas, wherein the outer chamber is an autoclave (Figure 2, autoclave 10, container 11);

an inlet for supplying dense gas as a solvent, wherein the inlet is configured such that the dense gas is introduced through a straight shaft and delivered to the center of the apparatus (inlet 23, inlet nozzle 19, inlet nozzle 21);

a porous chamber within the outer chamber for containing a substance for dissolution or suspension with the solvent, the porous chamber having a wall which allows passage of solvent and the substance dissolved or suspended in the solvent (filter 1), and

an outlet for removing solvent and solution and/or dispersion from the outer chamber (exhaust 25, overflow pipe 24) and a turbulence means for creating turbulence within the porous chamber, wherein the turbulence creating means comprises a drive means to rotate the porous chamber within the outer chamber (turntable 13, stepping drive 14, 15).

Regarding **claim 2**, Mertens discloses the apparatus wherein the inlet in the outer chamber supplies solvent directly to a mouth communicating with the porous chamber (air nozzle 19).

Regarding **claim 3**, Mertens discloses the apparatus wherein the inlet is in the wall of the outer chamber (inlet 23).

Regarding **claim 4**, Mertens discloses the apparatus wherein the inlet supplies solvent to the porous chamber and the region between the porous chamber and the outer chamber (air nozzle 21).

Regarding **claim 5**, Mertens discloses the apparatus wherein the porous chamber is further provided with a longitudinally extending shaft communicating with the solvent inlet of the porous chamber (air nozzle 19, shaft extending into the porous chamber with inlet opening at end).

Regarding **claim 6**, Mertens discloses the apparatus wherein the shaft is porous or perforated (air nozzle 19, shaft extending into the porous chamber with inlet opening at end, thus it is porous).

Regarding **claim 7**, Mertens discloses the apparatus wherein the porous chamber is adapted to receive the substance in the region around the longitudinally extending shaft and the porous chamber is adapted to receive solvent through the shaft (Figure 2, air nozzle 21, air nozzle 19, inlet 23).

Regarding **claim 11**, Mertens discloses the apparatus wherein the porous chamber is provided with a plug to hold the substance against the base of the inner chamber (Figure 2, lower end of filter unit is solid).

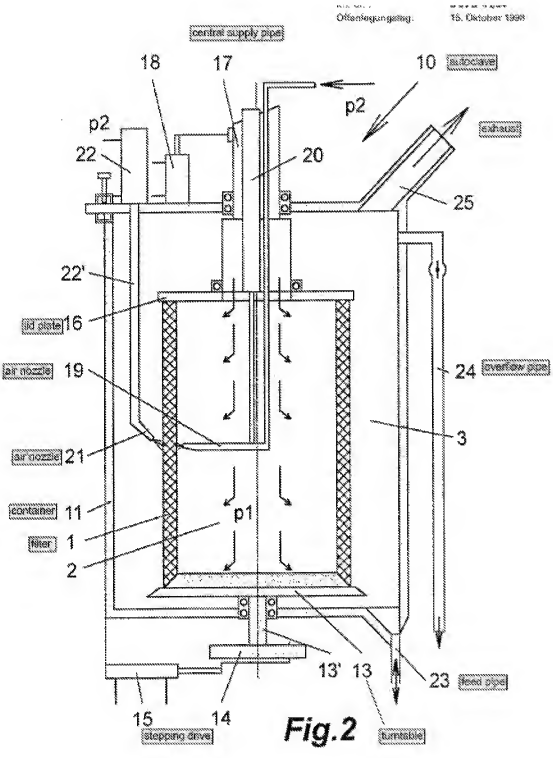
Offenlegungstag. 15. Oktober 1998
central supply pipe
18
17
10
autoclave
p2
p2
exhaust
22
20
25
22'
lid plate
16
air nozzle
19
24
overflow pipe
3
air nozzle
21
container
11
p1
filter
1
2
13'
13
23
feed pipe
15
14
stepping drive
turntable

Fig.2

6. Regarding limitations recited in **claims 29 and 30** which are directed to a manner of operating disclosed autoclave, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Mertens (DE 19714790), as applied to **claims 1 and 11** above, and further in view of Pesiri et al. (US 6,916,389, "Pesiri").

Regarding **claim 12**, Mertens discloses all of the claim limitations as set forth above. While the reference does disclose that the plug is a planar element abutting the sides of the inner chamber (Figure 2, lower end of filter element, on turntable 13), the reference does not disclose that the plus is held against the substance by a resilient biasing means.

Pesiri discloses a pressure vessel with an inner filter (Figure 2, 102, 105, 106). The reference teaches that a spring loaded bottom plate can be used with the filter element in order to secure and seal the filter (C8/L43-46).

It would have been obvious to one having ordinary skill in the art to substitute a spring loaded bottom plate on the filter of Mertens, as taught by Pesiri, since doing so will secure the filter onto the turntable with additional pressure and will seal the bottom edge of the filter element.

9. **Claims 1-4 and 29-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Compton (US 4,443,321) in view of Cham (US 5,744,038).

Regarding **claims 1 and 31**, Compton discloses an apparatus for dissolving or suspending a substance in a solvent (abstract) comprising:

- an outer chamber, wherein the outer chamber is a an autoclave (Figure 2, C4/L17-38, autoclave reactor 30)
- an inlet that is configured to deliver fluid through a straight shaft, to the center of the apparatus (Figure 2, inlet 36, C4/L17-38)
- a porous chamber within the outer chamber, the porous chamber having a wall which allows passage of solvent and the substance dissolved or suspended in the solvent (Figure 2, porous container 42, C4/L17-38)
- an outlet for removing solvent and solution and/or dispersion from the outer chamber (Figure 2, C4/L17-38, outlet leading into valve 53)

While Compton discloses that the apparatus has turbulence means for creating turbulence within the porous chamber (Figure 2, C4/L17-38), the reference does not disclose that the turbulence means comprises a drive means to rotate the porous chamber within the outer chamber. Rather, the reference suggests a drive means with a propeller-type stirrer (propeller

blades 44, motor 46). The stirrer works to mix the gases above the liquid solvent in the pressurized chamber (C4/L17-38).

Cham is related to a pressure vessel with an internal porous chamber which is used in extraction procedures. Cham discloses that drive means act to rotate the inner porous chamber to allow the solids to interact with the extraction solvent (Figure 2, 46, C3/L26-40). Cham discloses that this type of dispersing means for the incoming fluid offers advantages over other forms of extraction by working rapidly and ensuring a maximum extraction ability of the solvent (C3/L26-40).

It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate a drive means to rotate the inner porous chamber of Compton, as taught by Cham, since doing so provides will provide a more rapid extraction (in comparison to a stationary inner chamber) and will ensure a maximum extraction ability of the solvent.

Regarding **claim 2**, Compton discloses the apparatus wherein the inlet in the outer chamber supplies solvent directly to a mouth communicating with the porous chamber (Figure 2, inlet 36, C4/L17-38).

Regarding **claim 3**, Compton discloses the apparatus wherein the inlet is in the wall of the outer chamber (Figure 2, inlet 36, C4/L17-38).

Regarding **claim 4**, Compton discloses the apparatus wherein the inlet supplies solvent to the porous chamber and the region between the porous chamber and the outer chamber (Figure 2, C4/L17-38, inlet 36).

Regarding **claims 5-7, 26 and 31,** Compton does not disclose the apparatus wherein the porous chamber is further provided with a longitudinally extending shaft communicating with

the solvent inlet of the porous chamber, or that the shaft is porous or perforated. Finally, Compton does not disclose that the porous chamber is adapted to receive the substrate in the region around this shaft and the porous chamber is adapted to receive solvent through the shaft. Rather, the reference suggests that the inlet tubing terminate at the container wall (inlet 36, Fig. 2).

Cham discloses an alternative arrangement of the inlet tubing, wherein a shaft with an opening at the end extends into the porous chamber for the delivery of solvents (tube 42, opening 45). Since the instant specification is silent to unexpected result, it would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the inlet of Compton on a shaft extending into the porous chamber, as taught by Cham, because selecting one of known designs for an opening would have been considered obvious to one of ordinary skill in the art at the time of the invention and because said an opening which delivers solvent to the porous chamber would operate equally well as the one disclosed by Compton. Moreover, Cham discloses that the supply of the fluid through an inlet in the porous chamber may help to disperse the fluid into the outer chamber as the porous chamber rotates (C3/L26-39). This would be particularly useful where the apparatus is being used for delipidating plasma, which may be combined with blood and reintroduced to a subject (C3/L26-39, abstract). Therefore, one of ordinary skill in the art would be motivated to change the arrangement of the inlet opening, such that it is in the form of a shaft extending into the porous chamber, so that the fluid entering can better disperse into the surrounding fluid. This increases the utility of the device by allowing it to be appropriate for delipidation of plasma which can be later be reintroduced to a subject.

While the inlet (44) is in the form of a longitudinally extending shaft in fluid communication with the inlet (Figure 2), the reference does not disclose that the shaft is porous along the length of the shaft. Rather, the inlet tube appears to have just a single opening on the end of the tube.

However, inlet tubes which are porous along the length, as opposed to a single opening on the end, are widely used and well known in the art (as evidenced by Green, US 4,476,928, Figures 1 & 2; Pevere et al., US 2,595,979; and McMurphy, US 5,055,185). It would have been obvious to one having ordinary skill in the art at the time of the invention to try using an inlet tube which is perforated along its length as opposed to an inlet tube which has only a single opening on the end since doing so amounts to nothing more than the choice from a finite number of predictable types of inlet tubes, all of which will perform the desired function of adding fluid to the chamber.

Regarding **claims 29-30**, Compton discloses that the reactor is an autoclave (C4/L17-38) which may operate at pressures between 500-5000 psig (approx. 34-344 bar) and at a wide range of temperatures (C3/L40-53). Therefore, the apparatus is capable of the functional language recited in **claims 29-30**.

10. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Compton (US 4,443,321) and Cham (US 5,744,038), as applied to **claim 1** above, and further in view of Osdor (US 3,734,160), Garrett et al. (US 4,452,701), Cole (US 6,000,625), and Ohno (US 2003/0151176).

Regarding **claim 10**, Compton discloses all of the claim limitations as set forth above. While the reference is concerned with the dissolution of a solid material in a solvent, using

turbulence-generating means (C4/L16-38, C5/L40-50), the reference only using a propeller-type mixer. Particularly, the reference does not disclose the apparatus where the turbulence creating means further comprise baffles extending from the inner surface of the outer chamber in the region between the porous chamber and the wall of the outer chamber.

Osdor teaches that baffle plates are known to increase turbulence, thus providing additional mixing and dispersal of fluids (C5/L9-13). Garrett et al. teaches that an increase in turbulence is known to increase the rate of dissolution (C2/L6-9). Cole also teaches that if it is noted that there is not enough turbulence in a mixing system that additional baffles should be added to the system (C3/L13-19). Finally, Ohno et al. teaches that baffles on the inner surface of an outer chamber will aid in generating turbulence, which in turn speeds dissolution rates ([0046]).

It would have been obvious to one having ordinary skill in the art at the time of the invention to add baffles to the inner surface of the outer chamber of Compton, as taught by Osdor, Garrett et al., Cole and Ohno et al., since doing so will increase turbulence in the vessel, thereby increasing the rate of dissolution and overall, decreasing the process times.

Response to Arguments

11. Applicant's arguments filed 15 June 2011 have been fully considered but they are not persuasive.

12. Applicant argues that Mertens does not disclose an inlet with a straight shaft that is capable of delivering a solvent gas to the center of the apparatus. As support for this, applicant argues that Mertens teaches an inlet with a bent/angular shape as opposed to a straight shaft or one that is parallel to the rotational access of the apparatus. This argument is not persuasive.

Inlet nozzle 19 of Mertens introduces fluid into the chamber with a straight shaft; the shaft has two straight sections, a horizontal section and a vertical section. Alternatively, as presented above, feed pipe 23 may also be interpreted as the inlet. Pipe 23 is a straight shaft. Both inlets are capable of delivering fluid to the center of the chamber (even if not directly aimed toward the center, circulation in the chamber will allow the fluid to reach the center of the chamber).

13. Applicant argues that the combination of Mertens and Pesiri does not render the claims as obvious over the prior art as any change to the nozzles of Mertens would render the device inoperable for its intended purpose. The combination of Mertens and Pesiri presented in the rejection does not alter the nozzle configuration of the reference. Rather, the combination substitutes lower plate of the filter element with a spring loaded plate. This change to the filter element does not affect the nozzles of the autoclave; therefore, applicant's arguments are not persuasive.

14. Applicant's arguments regarding the combination of Compton and Cham and the turbulence means have been noted and the above rejection has been adjusted accordingly. The use of a rotating inner chamber will impart advantages to Compton by increasing interaction between the solid components within the porous chamber and the solvent. This modification does not destroy the intent or function of Compton. Rather, it will enhance the extraction process.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHERINE ZALASKY whose telephone number is (571)270-7064. The examiner can normally be reached on 7:30am - 4:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KRISHNAN S MENON/
Primary Examiner, Art Unit 1777

/K. Z./
Examiner, Art Unit 1777
1 July 2011